WHO/V&B/99.33
ORIGINAL: ENGLISH
DISTR.: GENERAL

Immunization and health sector reform in the Kyrgyz Republic

Report of a WHO-led mission, 1-12 March 1999

Team members:

Rachel Feilden	BASICS consultant
Svetlana Firsova	Head, Republican Centre for Immunoprophylaxis
Gülin Gedik	WHO/EURO
Şahin Hüseynov	UNICEF Azerbaijan
Yuri Lisitsin	*Zdrav*Reform, Almaty
Noorgoul Seitkazieva	Coordinator
Robert Steinglass	BASICS, Team Leader

DEPARTMENT OF VACCINES AND BIOLOGICALS

World Health Organization, Geneva, 2000

in collaboration with:

UNICEF

ZdravReform
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The Department of Vaccines and Biologicals thanks the donors whose unspecified financial support has made the production of this document possible.

This document was produced by the
Expanded Programme on Immunization
of the Department of Vaccines and Biologicals,
co-authored by **BASICS II, UNICEF, ZdravReform MOH**
and the **WHO Office for the European Region**

Ordering code: WHO/V&B/99.33
*Printed : **December 1999***

This document is available on the Internet at:
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Copies may be requested from:
World Health Organization
Department of Vaccines and Biologicals
CH-1211 Geneva 27, Switzerland
• *Fax:* +22 791 4193/4192 • *E-mail:* vaccines@who.ch •

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Acknowledgements

The team would like to thank all those whom we contacted in the course of this mission, not only in the Kyrgyz Republic (please refer to the people met, shown in Annex 2) but also during preparations, by responding to telephone calls and e-mails, and by providing documents and sharing insights. For assistance during the preparatory phase we are grateful for the input of Michael Borowitz, Jane Haycock, Judith Healy, Carol Hoppy, Sergei Litvinov, Ian MacArthur, Patricia Moser, Sheila O'Dougherty, Martin Taylor, Abdelmajid Tibouti, Murray Trostle and Michel Zaffran. The comments and feedback during the debriefings in Kyrgyzstan and the presentations in Geneva, Copenhagen and Washington also contributed to this report, and we thank all those who participated in those sessions.

Acronyms and glossary

AD	auto-disable non-reusable syringe (formerly called auto-destruct)
BASICS	Basic Support for Institutionalizing Child Survival, a project funded by USAID and carried out by the Partnership for Child Health Care, Inc. (John Snow Incorporated, Management Sciences for Health, and the Academy for Educational Development)
BCG	Bacillus Calmette-Guérin (vaccine against tuberculosis)
CAR	Central Asian Republics (Kazakstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan)
DALY	disability adjusted life year
DLY	discounted life year
DPT	diphtheria, pertussis and tetanus toxoid
DT	diphtheria and tetanus toxoid vaccine
EPI	Expanded Programme on Immunization (WHO)
FAP	*Feldshersko Akoucherskyi Punkt*; the smallest type of health facility, staffed by a *feldsher* and an obstetric nurse responsible for domicillary services. Some FAPs are supervised by a SUB, some by a SVA, and some by the polyclinic and the Rayon SES, depending on their location
feldsher	paramedic (medical practitioner lacking graduate qualification) trained to work in a rural facility (see FAP)
FGP	family group practice
FGPA	Family Group Practice Association
FSU	Former Soviet Union
FTE	full time equivalent

GDP	gross domestic product
GPV	Global Programme on Vaccines and Immunization (WHO)
HIF	Health Insurance Fund
IEC	Information, Education and Communication
IICC	Inter-Agency Immunization Coordinating Committee
MANAS	folk epic describing Kyrgyz Khanat, the first Kyrgyz State, 6th to 13th century AD; also name of the main hero of the epic
MIS	Management Information System
MoH	Ministry of Health
NICC	National Immunization Coordinating Committee
NIS	Newly Independent States of the former Soviet Union
NPI	National Programme for Immunoprophylaxis
Oblast	administrative area (province or region) below national level
OPV	oral polio vaccine
PHC	primary health care
Prikaz	official order or regulation (plural is *prikazy*)
Rayon	administrative area (district or county) below Oblast level
RCI	Republican Centre for Immunoprophylaxis
REACH	Resources for Child Health; a project funded by USAID and carried out by John Snow Incorporated, Arlington, Virginia, USA
SES	*Sanitarno-Epidemiologicheskaya Stantsyia*: Sanitary and Epidemiological Station (at Oblast, Rayon and municipal levels)
Som	currency of the Kyrgyz Republic (30 Som = US$1 in March 1999)
STD	sexually transmitted disease
SUB	*Selskaya Uchastkovaya Bolnitsa*: Rural Area Hospital, a bedded health centre with several physicians and 10-50 beds. Offers a range of primary care services, maternity care and dentistry; supervises FAPs. Reports to the Central Rayon Hospital.

SVA	*Selskaya Vrachebnaya Ambulatoryia:* Rural Medical Ambulatory, a facility without beds, staffed by several physicians, midwife, nurses. Smaller than a SUB; supervises FAPs. Reports to the Central Rayon Hospital.
Td	tetanus and antigenically-reduced diphtheria vaccine
Uchastok	catchment area (plural is *uchastki*); conditional administrative area below Rayon level
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization
WHO/EURO	European Regional Office of WHO
*Zdrav*Reform	health reform project in several states of the FSU with funding support from USAID and technical assistance from Abt Associates, Cambridge MA and Bethesda MD, USA

Executive summary

In 1997 and 1998 at its most recent meetings, the Inter-agency Immunization Coordinating Committee (IICC) recommended that WHO should examine the interplay between health sector reform and immunization in three countries of the Newly Independent States (NIS) and Eastern Europe. On behalf of WHO/Geneva, a multi-agency team conducted a fact-finding mission to the Kyrgyz Republic, the first of the three countries to be visited. The purpose of the mission was to analyze how to ensure that immunization services can continue to function well within a context of health sector reform. The team :-

- identified and analysed changes in immunization services;
- explored how immunization services of high quality can continue to be accessed and utilized to the greatest extent possible within the context of Kyrgyz health reforms;
- provided guidance and identified strategic options for counterparts and partner agencies on how to maintain and modernize immunization services for improved disease control in settings with reformed health systems.

Health reforms in the Kyrgyz Republic are in the process of being implemented using a flexible and pragmatic approach which allows adjustments to be made in response to experience. For primary health care, including immunization, the greatest change is the introduction of family group practices (FGPs) and the creation of FGP Associations. These professional bodies are involved in setting standards and defining indicators, and potentially have considerable influence on the quality of care. FGPs have been formed in Bishkek City, Chui Oblast and Issyk-kul Oblast. They are intended to alter the work patterns of the primary care specialists, including paediatricians, and their support staff. The mission identified policy options and indicators for use on an ongoing basis to guide the Kyrgyz reforms.

The Kyrgyz Republic has initiated many reforms in its immunization services since independence. The Republican Centre for Immunoprophylaxis (created in 1994) has been implementing the 1994-2000 plan for the National Programme for Immunoprophylaxis, and has made substantial improvements. The team concluded that continuous networking is needed, to ensure that immunization experts are engaged with experts in health reform, and suggested that the mechanism could be a National Immunization Coordinating Committee (NICC). The Minister of Health agreed that an NICC should be formed, with the Deputy Minister as the chairman. The Minister also agreed to the team's recommendations that:

- the MoH and the World Bank should prioritize immunization when adopting health reform;
- explicit prevention goals should be included in health reform;
- immunization coverage should be used to monitor the health outcomes of reform.

1. Introduction

In March 1999 a multi-agency team met in the Kyrgyz Republic for a fact-finding mission, to explore how immunization services could best continue to work effectively within the context of health sector reforms. The participating agencies were BASICS, UNICEF, USAID, WHO, *Zdrav*Reform and the Ministry of Health of the Kyrgyz Republic. The terms of reference are shown in Annex 1.

Before leaving Bishkek the team met the Minister of Health for debriefing. During the next three weeks some team members also debriefed and presented the main findings of the mission to WHO and UNICEF in Geneva, to WHO/EURO and the Inter-agency Immunization Coordinating Committee in Copenhagen, and to USAID, World Bank and interested partners in Washington. This report contains not only the findings from the mission itself, but also some issues raised during subsequent discussions with key partners.

2. Background

The origin of the mission lies in concern over how public health and preventive services, such as immunization, will continue to function effectively within the changed structures and responsibilities being introduced by reforms in the health sector (see Annex 1). The details of policies and strategies vary considerably between countries. Many aspects of preventive services require universal implementation to be effective, so the extent to which reforms affect access to and use of preventive care formed a focus for this mission.

For the Newly Independent States (NIS) of the Former Soviet Union (FSU), the focus was on the role of two branches of the health service within the broader context of reforms (see Figure 3):

- the Republican SES (Sanitary and Epidemiological Service), a department of the MoH, and its subsidiary sections at Oblast and Rayon levels;
- the paediatricians and nurses responsible for child care including immunizations, and the health departments, training institutes and professional associations which support them.

Several countries in the FSU have chosen reforms that are intended to shift the emphasis of medical care towards market mechanisms (such as consumer choice and financial incentives for providers). There is concern that when market mechanisms are applied to public health and prevention, there are "market failures."

The Inter-agency Immunization Coordinating Committee (IICC), whose secretariat is WHO/EURO, meets annually to share information about progress on immunization in the European Region of WHO, including the Central Asian Republics (CAR). At the last two meetings in 1997 and 1998, the IICC recommended that:

- the World Bank and ministries of health should prioritize immunization when adopting health sector reforms;
- explicit prevention goals should be included within health sector reforms; and
- mechanisms should exist to monitor the health outcomes of health sector reforms.

Before a high level inter-agency meeting in April 1999 in Bellagio, Italy, on future directions in immunization, a small working group with representation from WHO, UNICEF, World Bank, the vaccine industry and the Rockefeller Foundation interviewed 186 experts about their perspectives on global priorities in immunization for the next decade. The participants in this survey urged that the priorities for immunization should be addressed within the overall context of health sector reform.

The Kyrgyz Republic was the first of three countries to be visited. The findings of this mission are being used in formulating criteria for selecting the other countries.

3. Purpose

The objective of the mission was to learn how countries can introduce reforms while still strengthening essential public sector services. This was a fact-finding mission to analyse how immunization can continue working effectively within a context of ongoing health reforms. The team looked at the impact of reforms upon structural and functional arrangements for immunization.

It must be emphasized that the mission's purpose did not include assessing the impact of reforms on health outcomes. First, such an assessment would be premature (as implementation is phased and not yet completed). Second, ascribing cause and effect would be fraught with problems. Finally, the mission was too short to make an assessment of how reforms are affecting parents' use of services at community level; any attempt to assess impact would have to include this level, given the type of changes introduced and the new phenomenon of internal migration (see Section 5).

4. Approach and method

The team included members with experience of health sector reform in the Kyrgyz Republic, of immunization in Kyrgyzstan, and of both health reforms and immunization in other countries. Background documentation was collected (see Section 10). This background reading plus networking with key individuals helped in building an agenda of people and places to visit. The schedule of meetings and the people met are shown in Annex 2.

The first step was to understand the current objectives and status of reforms in general, and how they are affecting the management functions that are essential to immunization (see Matrix 1).[1] To consider how reforms might affect quality of services and uptake by the community, this mission used the goals and objectives of immunization encapsulated in Box 1.

[1] These functions had been identified in 1997 during a similar mission in Zambia and Uganda for WHO/GPV/EPI, BASICS/USAID and DANIDA (Feilden and Nielsen 1998).

Matrix 1: Functions of immunization services which are the responsibility of national level

Function	National level only	National and/or other levels
Formulating national policies, standards and guidelines and disseminating them (e.g. manuals)	Yes	
Planning international co-ordination (e.g. for NIDs)	Yes	
Planning service delivery strategies; advocating the chosen approach with health professionals and other sectors		National co-ordinates with other levels, and disseminates news of creative and successful local solutions
Advocacy for allocation of funds from central ; government co-ordinating donor support		Preferable to ensure equitable distribution
Procurement: preparation of tender documents, monitoring quality of products bought under the tender (vaccines, equipment, and supplies)		Yes
Purchase, customs clearances, storage, stock management, distribution		These functions may be delegated (as in S. Africa)
Forecasting, quantification	Monitor the quantities forecast	With bottom up forecasting, national level can aggregate totals from lower levels, but total quantity ordered may be others' responsibility (as in S. Africa)
Monitoring, surveillance and reporting; design of formats for use nation-wide	Aggregate data from lower levels; key role in surveillance (AFP, measles, NT). Forward data to WHO Regional Office.	Local staff, close to point of service delivery, can act promptly, before data reaches the national level.
Focal point for research pertaining to immunization	Yes; choice of topics, priority setting and co-ordination are needed for best use of resources	
Organizing reviews (evaluations)	Yes	Lower levels participate
In-service training; updating skills	Skill requirements defined as per policies, standards and guidelines	National participates in curriculum development; training itself can be delegated and decentralized
Supervision	(See monitoring and reviews)	May be delegated

Box 1: Goal and objectives of immunization

Goal of immunization:

to reduce morbidity and mortality from vaccine preventable diseases, doing no harm in the process.

Checking objectives*:

Are immunization services ...

- providing potent vaccine?
- correctly administered?
- safely administered?
- properly documented?
- administered at a time when client is susceptible and prior to exposure?

Do all eligible children have access to the system, and use it?

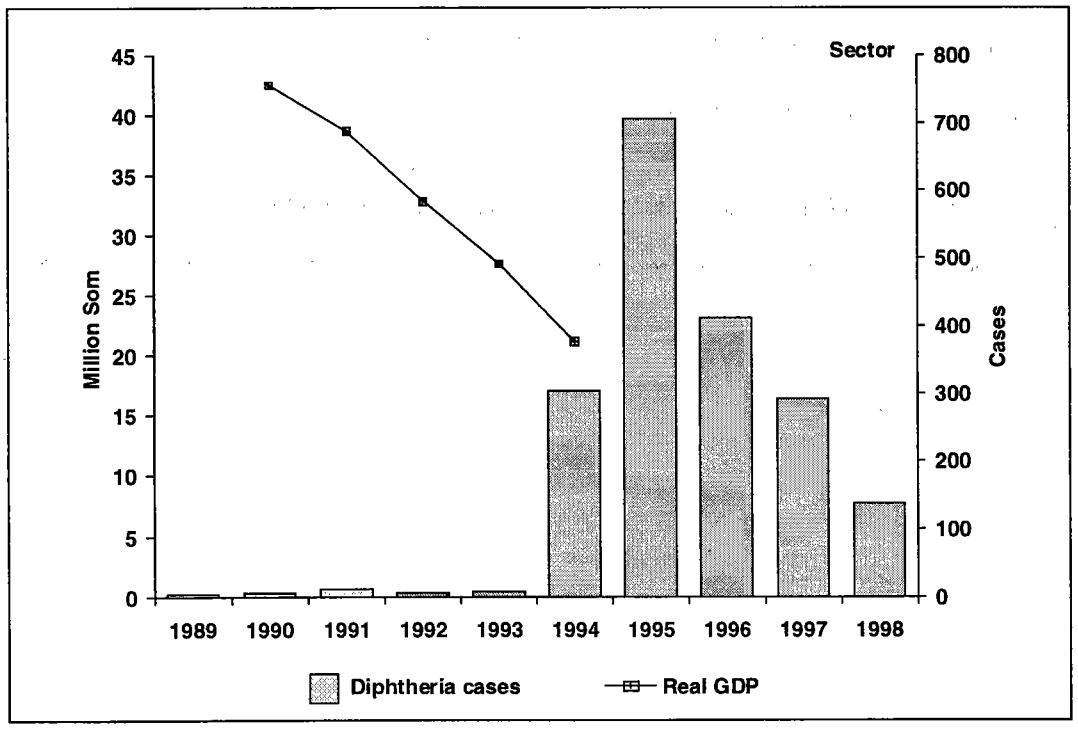
Is preventable disease prevented?

* In a recent EPI Review, 61 questions were used to check these elements.

5. Social, economic and epidemiological context

The Kyrgyz Republic gained political independence in 1991 following the break-up of the Soviet Union. An overview and map are shown in Annex 3. Following independence, much of the previous administrative and legal infrastructure had to be modified to fit the new circumstances. Figure 1 shows two indicators during the last decade: real gross domestic product (GDP) and diphtheria cases.

Figure 1: Chart for GDP and diphtheria cases



Real GDP was falling throughout the period, and Kyrgyzstan embarked on a programme of economic stabilization and structural reforms including privatization, restructuring of state enterprises, and reforms in the financial sector and the civil service (public sector management). The trade imbalance caused a shortage of drugs and other medical supplies, and the decline in the real value of public sector salaries continues to be a major problem. The problems in the health services and the broader economic decline led to a deterioration in the health status of the population. The collapse of the Russian ruble in November 1998 caused a deep economic crisis. At the time of this mission two-thirds of the population (64%) were estimated to be below the poverty line. The Red Cross declared an emergency in February 1999, as many household incomes were insufficient to ensure adequate diets for the vulnerable.

During the 1990s the Kyrgyz Republic has experienced the return of a disease that used to be successfully prevented by immunization. As in several other NIS countries, the number of diphtheria cases rose. "Factors contributing to the epidemic included a large population of susceptible adults; decreased childhood immunization, which compromised what had been a well-established childhood vaccination program; sub-optimal socioeconomic conditions; and high population movement." (Vitek and Wharton 1998.) By 1990, on-time coverage of infants and young children had fallen because of resistance to immunization on the part of health workers and the population. Children were considered by many health workers to be too weak and vaccines too strong (Keith 1994; Steinglass and Rodewald 1997). It was extremely common for paediatricians to diagnose temporary medical contraindications to immunization (Weeks 1996a, 1996b). All these factors contributed to late and incomplete childhood immunization.[2]

A phenomenon that has developed since 1991 is the population's ability to move freely within the Republic. The extent of internal migration is illustrated in Box 2.

Box 2: Illustrations of population movements affecting immunization services

Bishkek City Health Department said that the population of the city was:

620 000	officially registered	
720 000	registered by health staff's enumeration (every six months or annual)	+16%
1 020 000	according to the Ministry of Internal Affairs	+65%

FAP staff with an attached population of 2600 (in Chui Oblast, close to Bishkek):

From 1969 to the early 1990s it was normal to have 70-80 children under one year old.
At present the *feldsher* had 36 children under one in her register.
In 1998, 50 children under 15 years moved in or out of the FAP's area.
During the first two months of 1999, 20 children years 5 moved in or out.

This amount of movement poses a challenge to all preventive health services, especially those such as immunization which must know the whereabouts of eligible individuals and provide them with services according to a carefully timed schedule. The fall in the birth rate has also required substantial adjustments for the immunization programme at all levels, from recalculating the quantity of vaccine required, to altering session frequency in order to control wastage from multidose vials of vaccine.

[2] DPT vaccine is spoilt by excessive exposure to warm temperatures and by being frozen. Cold chain studies in the region have shown that vaccines stored in domestic refrigerators are exposed to unacceptable storage conditions, including sub-zero temperatures inside health facility refrigerators in winter (Lugosi and Battersby 1990; Bass *et al.* 1996; Battersby 1998). Although none of the published studies of the diphtheria epidemic has shown that the quality of the vaccine was compromised, the contribution of incorrect storage conditions cannot be ruled out.

6. Developments in the health sector, 1992 to 1999

Health reforms have been proceeding within the wider context of social and economic changes outlined above. Figure 2 shows selected activities in the health sector on a time line. These activities are described below under six headings.

6.1 General reforms in the health sector

New Health Laws were adopted in 1993, and in 1994 the State Programme for a Healthy Nation was adopted, covering all aspects of health policy including environmental health. In March 1994 the Ministry of Health and WHO/EURO signed a Memorandum of Understanding which provided for creating a comprehensive and consistent policy framework for reforming the health care system. The MoH's intention was to develop a master plan for health reforms; technical and financial inputs from donors and international organizations could then be coordinated within the plan's framework.

The National Programme of Health Care Reforms (1996-2006) was developed in three stages: a situation analysis (June-December 1994); development of strategic policy options (January-March 1995); and refinement of the selected policy options (April 1995 - June 1996). About 50 staff from central and Oblast level were members of the MANAS team.[3] The MANAS Master Plan was adopted on 10 June 1996, giving the first translation of policies into strategies (Ministry of Health 1996b). The two year process allowed time for strengthening management capacity - which would be vital as the reforms changed the previous system based on administrative regulation to one of active management - and for building consensus on the nature and direction of reforms.

These reforms are designed to:-

- improve equity, health gain and efficiency;
- rationalize use of resources, especially by hospitals and specialist institutions;
- reduce the health system's previous orientation towards curative care, and shift the emphasis to prevention;
- reorientate primary care specialists in paediatrics, gynaecology and internal medicine towards Family Medicine or General Practice.

[3] MANAS is the folk epic describing Kyrgyz Khanat, the first Kyrgyz State, 6th to 13th century AD. The millennium of the epic was celebrated in 1995.

Figure 2: Time line of selected activities in the health sector, Kyrgyz Republic

Activities	1992	1993	1994	1995	1996	1997	1998	1999
Emergency childhood imm. support programme	X							
Cold chain training manual for Kyrgyzstan								
Health law adopted								
State Programme for Healthy Nation adopted								
Republican Centre for Immunization established			X					
National Programme on Immunization adopted								
Development of NPI mgmt information system								
Nationwide introduction of revised MIS for NPI					X			
MANAS Health Care Reform Programme initiated								
MANAS team established; situation analysis								
Development of MANAS strategic policy options								
Refinement of MANAS selected policy options								
MANAS master plan adopted					X			
Demonstration in Issyk-Kul:								
Training FM trainers, FGPs, patient enrolment				*TOTs*	*3/96 Enrolment*			
World Bank financed project implemented								
Hospital rationalization & reorganization								
Establishment of health insurance fund (HIF)								
Physicians retraining in family medicine								
Establishment of Family Group Practices (FGP)								
Family enrolment into FGPs in Bishkek and Chui								
Initiation of case based supplementary payments to hospitals from HIF								
Initiation of per capita supplementary payments to FGPs from HIF								
Practice managers trained in Issyk-Kul								
Nurses retraining for their role in FGP								
President declares 1999 "Year of Health Care"							X	

The time line in Figure 2 shows that implementation of the reforms is phased to proceed at a pace that can be managed, thus allowing for adjustments in response to the first experiences of implementation and to unforseen events. This flexibility in both the timetable and the strategies has enabled the Health Reform Team to respond appropriately to risks and threats. One of the challenges facing this mission was to understand the current strategies of reforms in practice, as compared with the original plans described in the documents.

Matrix 2 shows a schematic summary of these developments.

Matrix 2: Schematic summary of health sector reform in the Kyrgyz Republic

How did health sector reform originate?	Reforms originated from change in the political system in 1990, economic decline, shrinking government revenues, inefficiencies in the health care system and deterioration in health status.
Planning and accountability?	Planning moved from the central level of the Former Soviet Union to the newly independent Kyrgyz Republic's Ministry of Health. Co-ordination of health reforms was under the MANAS Programme by 1996 and continues to be done by the Health Reform Project Team.
Reform in other sectors also?	Yes: in the civil service and public sector management, restructuring of the economy to reduce direct involvement of the state, price liberalization and removal of major restrictions on foreign trade.
Focus of health reform?	Improving equity, health gain and efficiency; emphasis on strengthening primary health care, introducing incentives for providers.
Scope of health reform	Includes hospitals & ambulatory care; SES involvement now increasing; Phased: Hospital rationalization throughout the Republic; Training in Family Medicine and introduction of FGPs started in Issyk-Kul Oblast (1996) then Bishkek City and Chui Oblast. Rationalization of budgeting, specialist care and Republican Institutes. New entities created: Health Insurance Fund (HIF), Family Group Practices (FGPs), FGP Associations, and RCI (for immunization). New cadres: Family Medicine physicians, Practice Managers
Sources of funds?	National budget from general tax revenues and loan funds Local government budget raised and administered by Rayons Health Insurance Fund from Social Fund and employer tax Individual out-of-pocket expenditures top up government service provision especially for drugs, syringes, and bedding, laundry and food for inpatients. Use of private providers is very limited.
Sources of funds for immunization?	Government: payroll, recurrent items, non-primary vaccines; loan funds (hepatitis B vaccine) Donors: UNICEF and bilateral agencies Out-of-pocket expenditure on syringes when no stocks available.
Competes with other sectors for resources?	In Ministry of Finance, health competes for its budget allocation. At Oblast and Rayon level, health competes with other priorities. Primary care may compete with hospitals for its share of the allocation. FGP funds from HIF are earmarked for use on specified line items.
Staff employed by whom?	Assignments still controlled by Oblast and Rayon health administrations. Salaries are allocated from national budget (recentralized in 1997 to tackle problems with late payment by Oblast/Rayon). Future is unclear.
Changes in immunization services?	Yes: changes predate the development of strategy for health service reforms. Calendar of doses revised in 1992. RCI established in 1994. Preparation of NPI and comprehensive plan for 1994-2000. Many operational developments including cold chain, IEC and MIS.
Information systems	National: health information system being developed for joint use by MoH and HIF payment systems; can also be used for analysing costs and services provided to monitor the progress of reforms
Monitoring of the reform?	WHO/EURO monitors implementation (visit every six months); ongoing evaluation study in MANAS. Routine monitoring of services. Immunization monitored at each level using MIS developed in 1996.

6.2 Reorientation of primary care providers towards family medicine

The reforms emphasize provision of quality primary health care in ambulatory facilities; this policy is designed to increase the cost-effectiveness of limited resources, and improve health outcomes. The strategy was for the first point of contact to treat a case as fully as possible, and to refer only cases that were too complex for the primary level. This strategy involved (a) altering providers' referral practices that had developed in response to the incentives for keeping bed occupancy high, (b) broadening and deepening the skills of primary care providers so that they could treat all members of a family, and (c) persuading patients to go first to their primary physician rather than self-refer to the specialist they considered appropriate for their ailment.

Primary specialists' skills were to be expanded through continuing education courses in family medicine. This is a new specialty, so it will take a few years to build up a cadre of trainers in family practice.[4] A new faculty in Family Medicine has been created at the Medical School, and the first cohort of students has completed their three year course.

The existing paediatricians, gynaecologists and internists[5] were to attend a course preparing them for their wider duties within Family Group Practices.[6] The plan is to retrain 125 physicians in Issyk-Kul Oblast, 900 in Bishkek City and Chui Oblast, and 150 in Osh Oblast over two to three years. The phased strategy for reforms means that the remaining Oblasts can be brought in later, as training capacity permits. This training is organized by the Continuing Medical Education Institute which has always had responsibility for providing in-service training for doctors every five years. At present each medical faculty takes responsibility for its subject matter: paediatrics is taught by the Paediatrics Faculty of the Medical Academy, and the Republican Centre for Immunoprophylaxis covers immunization. As the cadre of trainers in family medicine grows, it will be possible for the primary care specialists' continuing education to reflect more closely the concept of family practice.

[4] Training of trainers began in Karakol; the course was designed specifically for Kyrgyzstan and pilot tested in Issyk-Kul Oblast as part of the *Zdrav*Reform programme with support from USAID and Abt Associates (Rommen, 1996). The first group of 8 trainers from the Family Physicians' Training Centre in Bishkek completed their one year course in 1998; another 10 trainees are currently enrolled.

[5] Internists are doctors of adult internal medicine, referred to as therapeutists in the FSU.

[6] In Issyk-Kul the course is four cycles of three weeks each cycle, spread over a year (Pers.comm., *Zdrav*Reform Project Manager). In Bishkek and Chui the plan was for an intensive three month course (Gedik and Kutzin, June 1998) but in practice this may have changed in response to comments from the monitoring team.

The reorientation towards family medicine is being implemented by rearranging primary care providers (paediatricians, gynaecologists and internists) into Family Group Practices (FGPs) in groups with at least one of each of these three types of doctors. The expected workloads of each specialty imply different catchment populations (see Annex 4). The team's analysis uses current assumptions about a feasible workload and illustrates that one full time paediatrician's clientele of 750 children under 15 years of age implies a catchment population of 2000, for which the gynaecological workload could be met by 13% of a gynaecologist's time (1/8 of a "full time equivalent," or FTE). The internal medicine workload in a population of 2000 could be met by 43% or 80% of an internist's time (the workload norms for internists varied widely between sources). In reality, neither staff nor communities can be divided up so precisely. The important point is that when multi-specialty FGPs are created, some doctors will share their time between more than one practice, especially in rural areas where population density is lower, access is more difficult, and catchment populations are consequently smaller.

There is some fluidity in the proportions of primary specialists in an FGP. For example Chui Oblast Health Department expects six doctors (two paediatricians, three internists, one gynaecologist) to handle a population of 6000 (1500 families). The senior managers added that when all doctors are retrained, perhaps three family doctors could handle this workload. At one FAP in the same Oblast with a population of 2600, the paediatrician is full time (one FTE), the internist is at the FAP two days out of six (0.33 FTE), and the gynaecologist is 0.66 FTE and is also head of the facility.

Primary care specialists are supported by nurses, *feldshers* and other ancillary staff. In Issyk-Kul the proportion of nurses per doctor is 3.47 to 1. Immunizations are administered by nurses or *feldshers*, and the extent of their specialization depends on the type of facility where they work. For example a nurse or *feldsher* in a rural FAP will typically handle a wide range of tasks, whereas a nurse assigned to the immunization room in an urban children's polyclinic will spend all of her time on immunization. There is a three week course to prepare nurses for their less compartmentalized duties within a group practice. The course for general nurses has four to eight hours on immunization, with three-quarters of the time spent on practical work. Nurses' training has generally occurred after the doctors' training, and the FGPs in Bishkek and Chui have been established before nurses' retraining is completed.

The immunization room nurses (working in polyclinic buildings) have a four week refresher course (44 hours of theory, 64 hours of practical) as part of their routine continuing education (once every five years). The team found that the FGPs in polyclinic buildings are sharing one immunization room with one fridge, managed by an immunization room nurse who administers immunizations, looks after vaccines, records doses and uses the monitoring system developed for the National Immunization Programme. The interaction between the FGP nurses and the immunization room nurse is little changed from the previous system when each paediatrician had specific nurses working with him/her. If there are plans to "decentralize" the shared immunization room and for each FGP in the shared building to have its own vaccine fridge managed by the FGP nurse, then these plans have substantial cost implications for equipping, training and supervision. This is not an issue for the FGPs based in smaller facilities where nurses and *feldshers* already cover all primary care nursing tasks.

With the FGP concept a new cadre has been introduced: the practice manager. One practice manager is supposed to handle the administration and accounts for the workload of 15 to 20 family doctors. Different norms have been developed in Issyk-Kul, taking into account (a) the distances the manager must travel between FGPs, and (b) the total number of health personnel for whom the manager is acting. In Issyk-Kul Oblast the practice managers' average workload is 42 health personnel, with a range from 26 to 77.

Another new element arising from these reforms is the network of FGP Associations in the country and at national level. The role of these associations is to develop guidelines covering many aspects of family practice, to coordinate and develop projects for grants,[7] and to represent the interests of FGPs through their elected board members. When Issyk-Kul's FGPA was formed in 1995 some expected that the Chief Oblast Physician would head the association. In practice the FGP Associations are registered as non-government organizations, independent and decentralized, but they should have links to the Oblast or Rayon health administration. Funding for the Issyk-Kul FGPA's staff salaries comes from the *Zdrav*Reform project (Abt Associates) which also covers the per diems of Board members. One of the FGPAs at Oblast level wanted to stabilize their financing by gaining access to World Bank funds through affiliation with the national FGPA. In future there will be representatives from each affiliate on the national board. The chairperson of the national FGP Association has an office in the same building as other members of the Health Reform Team and is active in developing new guidelines including FGP equipment lists, indicators of performance and quality, and parent-held immunization cards. New guidelines are now being developed, with participation from RCI staff, on epidemiology, infectious diseases and immunoprophylaxis; these will have to be approved by the Scientific Council.

The FGP Associations have developed in a pragmatic and imaginative way. For example Issyk-Kul Oblast initially had two separate FGPAs for rural and urban FGPs, which are now merged into one association for the whole Oblast. After discussion about democratic representation for all health professionals in FGPs, Issyk-Kul's FGPA now allows one practice manager and one nurse to be elected to the board. This decision recognized that the function of the Nurses' Association was different and nurses in FGPs were part of the group practice.

6.3 Reorientation of clients to the new system

After the establishment of FGPs, families are encouraged to choose an FGP that will provide primary care and refer patients to specialists as needed. Enrolment with an FGP goes beyond entitlement to care; by exercising their choice, people fulfill their responsibility to expand the influence of patients on the health care system by making providers more accountable to their patients. Implementation of enrolment is linked not only to the formation of FGPs and retraining of staff described above, but also to the benefits package, user fees and the institutional structure of provider payment (Savas et al. 1998).

[7] These projects include obtaining funds for equipping newly formed FGPs or FGPs starting up outside existing health facilities; funding agencies include the US Peace Corps, USAID and Heart to Heart.

Enrolment began in Issyk-Kul in March 1996; people could choose any FGP in the Oblast. Under this policy of open enrolment some families chose to enrol with an FGP far from where they lived, thus making it impractical to use that FGP as their first source of care, and unreasonable for the physicians to visit these patients at home (as required by the treatment protocols). For immunization also, distance to services is a factor that can influence uptake. When enrolment started in Bishkek City and Chui Oblast in October 1998, the experience from the pilot in Issyk-Kul led to restricting people's choice to FGPs in the catchment area of the polyclinic where the FGP was based, or to the Rayon where the family lives.

The progress of enrolment is monitored by tracking the percentage of people enrolled. This indicator requires a denominator (the "attached" population) which is the number of people in the FGP's geographic catchment area. Establishing the denominator is straightforward in rural areas, but complex in urban areas where several FGPs work from a single polyclinic building covering several square kilometers. In practice the team found that the immunization staff (immunization room nurse and immunization officer[8]) continue to monitor uptake and coverage according to the geographic sub-divisions (*uchastki*) served by the facility where they work, using the monitoring system developed by the RCI, which is based on the total population of the catchment area.

The philosophy that individual choice has the potential to make providers accountable is based on the premise that people will choose their FGP based on the quality of care that the FGP provides. The post-enrolment marketing studies have found some evidence that other factors such as accessibility or proximity of the FGP have influenced people's decisions about where to enrol for primary care.

6.4 Financing health services

Reforms in financing the Kyrgyz health system are immensely complicated, the details have developed in new directions from the original plans, and will continue to be refined in response to circumstances and experience. There are two main objectives:

- changing the budgeting system from one based on the number and utilization of hospital beds to one that would encourage better use of resources (cost-effectiveness) and improve the quality of care (health gain);
- obtaining additional resources for health services.

The first objective is being addressed in coordination with the rationalization of hospital services, with technical assistance from the Know How Fund. The second objective is being addressed partly through the creation of a Health Insurance Fund (HIF) or kassa, the budget for which comes from an employer tax of 2% of payroll, and contributions from the government's Social Fund to cover pensioners and the unemployed (1.5 times the minimum salary rate). Children are not yet included in the HIF.

[8] An epidemiologist with special training, found at polyclinics and rayon level, referred to as an immunologist.

The HIF is not funded from payments of premiums for which the amounts are calculated from actuarial data. It is "insurance" in the widest sense of "extending effective health risk protection" (Savas et al. 1998). Its relationship to the Ministry of Health has recently changed; in 1998 the HIF was outside the Ministry, but now it is moving inside. This may make it easier for the "jointly used systems" for purchasing and provision to function smoothly. In future the Health Reform Team expects that the HIF will be referred to as the Health Fund. It provides extra resources for hospital inpatients and extra finance for FGPs.

The amount that an FGP receives from the Health Fund is linked to the number of people enrolled with that FGP. The formula is as follows:

<number enrolled X coefficient for that Oblast X annual per capita amount>

The use of a coefficient specific to each Oblast allows for equalizing adjustments to recognize variations in health needs (e.g., age structure, distribution of population). The coefficient for Issyk-Kul is 0.29. The Health Fund's annual allocation for every enrolled person can be adjusted according to the funds available; it is currently 35 Som ($1.17). FGPs that are licensed by the Licensing and Accreditation Division of the MoH in Bishkek are eligible to receive an allocation from the Health Fund. There are guidelines on how FGPs may use these funds; at present they can spend 55% on equipment (from a list approved by the FGP Association), 35% on salary bonus, and 10% on drugs (from an approved list). The FGPA recognizes that these percentages are likely to change over time; for example, when an FGP has reequipped the practice, the guideline percentage for equipment may be reduced.

Another source of funding that has been documented in household surveys is families' out-of-pocket payments for consultations, drugs, medical supplies and inpatient care (Blomquist 1997). For immunization the concern is that health workers may expect families to buy syringes as a sort of co-payment, if the health service does not have enough.

6.5 Immunization service reforms, 1992-1995

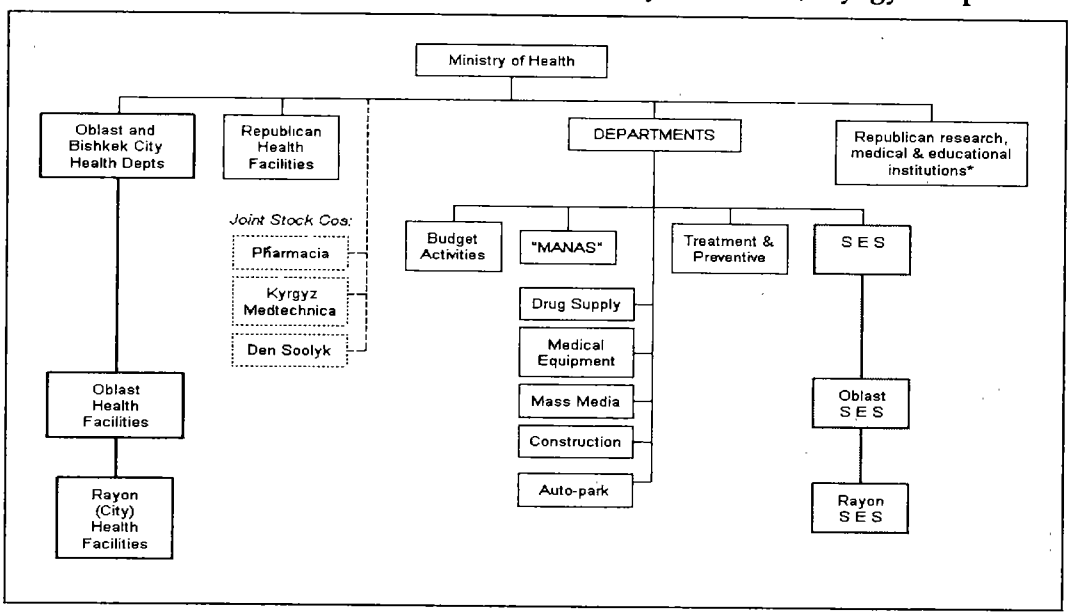
Changes in the organization of immunization services started before the major reforms in the health sector were formulated. In August 1991 a Republican Immunization Committee was established by decree as a consultative body under the Ministry of Health. One of the objectives in forming this committee was to overcome the separation of epidemiologists (who monitored disease and supplied vaccine through the Sanitary and Epidemiological Station (SES) structure) from paediatricians (who were responsible for children's immunization). In 1992, donor partners became involved in the former Soviet Union's immunization activities for the first time (Steinglass 1992). The first priority was provision of children's vaccines, followed by the need to reestablish control of measles[9] and of diphtheria which was growing into an epidemic across the entire region. This situation stimulated much technical discussion about epidemiological surveillance and disease control, monitoring systems, immunization schedules, quality of the cold chain, contraindicating by paediatricians and declining uptake among eligibles.

[9] There were 4,118 measles cases in the first nine months of 1993, the biggest outbreak since 1987 when a second dose was added to the schedule.

In December 1993 the Ministry of Health organized a planning exercise involving WHO/EURO, UNICEF and USAID/REACH that resulted in a plan for a National Program for Immunoprophylaxis (NPI), 1994-2000 (Hasselblad 1993b). This plan included the creation of the Republican Centre for Immunoprophylaxis (RCI) as a unit within the Republican SES, and the establishment of Oblast Centres for Immunoprophylaxis staffed by an immunologist (epidemiologist or paediatrician).

The plan was approved and the RCI started functioning in June 1994 with responsibility for implementing the new NPI, including coordination of activities by the Oblast Centres for Immunoprophylaxis (Steinglass 1994). The RCI succeeded in bringing paediatricians and epidemiologists together to manage the program, thus achieving a reform that MoH officials had identified as desirable some years before independence.[10] Figure 3 shows the organizational structure, with the SES on the right and health service providers on the left. This chart is about to change; there are now three deputy ministers and the new chart will show the departments for which each deputy minister is responsible.

Figure 3: Organizational chart of the Ministry of Health, Kyrgyz Republic



Organizational charts do not reflect the dynamics between entities; for example the RCI interacts not only with other departments of the Ministry of Health but also with the medical faculty, the Continuing Medical Education Institute, the research institutes and the laboratory services.

During the same period (1992 to 1994) there were numerous technical developments with operational consequences, including:

- A seminar on Child Immunization Policies, Practices and Policy Setting, conducted in Bishkek in December 1992 by the MoH with technical and financial assistance from USAID/REACH Project and WHO/EURO; the national immunization schedule was revised in a decree (Ministry of Health 1993a; Steinglass 1993).

[10] The RCI model was examined by visiting delegations from Tajikistan and Uzbekistan. Tajikistan has created its own RCI, organized differently to fit the context there.

- A symposium on Medical Contraindications to Immunization, jointly sponsored by the MoH, WHO/EURO and USAID/BASICS, was held in Bishkek in May 1995. Although the revised schedule was still not entirely consistent with WHO recommendations, the changes reduced the number of contacts from 17 to 12; reduced the number of doses from 22 to 19 for each child under 17 years old; and completed the schedule earlier in life, thus improving the impact on disease reduction. The reduced requirements for vaccines and injection equipment saved about $40 000 per year (6.7% of current expenditures on these commodities).
- Modernization of the cold chain and changes in cold chain management (Hasselblad 1993a; Pake 1993; Pake 1994).
- Development of new approaches to information, education and communications to promote demand for immunization (Keith 1994; Scriabine 1994; Olkhovsky 1995).
- The development of a unique bottom-up monitoring system (Larsen 1993b; Hasselblad 1995; Weeks 1995a; Weeks 1995b; Weeks 1996a). This monitoring system was introduced nationwide in 1996 (Weeks 1996b).

Box 3: MIS Trial in Alamudun Rayon, by Dr Vera Ivanovna Mikhachenko* Head of Epidemiology Department, Alamudun Rayon SES

"Introduction of monitoring is a brand new activity for our MIS [management information system] ... until now the data were collected and analyzed only at the level of the Ministry of Health. That is, the accumulated information was not in fact used by medical workers themselves, the most important thing was to send reports. It was a rare case we ourselves made decisions. ... I see monitoring as a system which changes our role to a practical health worker, turning him/her from a mere executor into a "master." The indicators were defined in accordance with the goals set by the National Programme for Immunoprophylaxis and for global requirements of the EPI. Performing our work using monitoring gives room for creativity - indicators can be changed or amended depending on the activities pursued."

* Presented at the Disease Surveillance Workshop, Tashkent, 24 May 1996 (Weeks 1996b)

6.6 Summary: What is health sector reform in the Kyrgyz Republic?

Health sector reform is sometimes treated as synonymous with "decentralization." Independence from the former Soviet Union entailed a fundamental decentralization which affected not only essential medical supplies (including vaccines) but also the entire administrative and regulatory framework. However, decentralization is not part of the language of health reforms in the Kyrgyz Republic.

Reforms of financing arrangements are designed to separate the provider and the purchaser and this objective is being pursued in a flexible and pragmatic approach, in concert with rationalization of health service provision. Additional financing is made available through the Health Fund which is funded from a payroll tax and from the government's Social Fund. Privatization is not part of the language of reforms in the Kyrgyz Republic. Doctors in FGPs still receive their salaries from the MoH budget, and the line item for salaries is protected; this means that although salaries may be paid late, they will not be cut.

The philosophy of encouraging market forces to improve the efficiency of medical services is present in the assumptions that: (a) providers respond to financial incentives "by allocating resources and organizing the provision of health services in the most efficient manner" (Technical Coordination Commission 1998) and (b) patients will exercise choice based on quality of services.

The Kyrgyz health reforms emphasize rationalization, with extensive work on hospitals and specialist institutions, replacing bed budgeting with case based supplementary payments. The objective is to reduce the reliance on treatment and hospitalization by shifting the orientation of providers, patients and resources towards primary care and prevention. These reforms should increase cost-effectiveness and improve health gain.

In summary, the reforms are specific to the Kyrgyz Republic; national, coordinated under the MANAS Health Sector Reform Team; pragmatic, with adjustments of strategy and timetable; step-by-step with phased implementation. This approach allows the reformers to face the risks and to work through unforeseen developments.

7. How a child gets immunized

Figure 4 shows the service providers in more detail. In broad terms the paediatricians and nurses invite parents of the children who are eligible to come for immunization, administer the doses, track each child's immunization status, and report the services they have provided to the Rayon SES. The immunization officer at the SES is responsible for the supply of vaccine and some equipment, and for monitoring and aggregating reports from individual facilities into summaries for the Rayon. Data for the Rayon are sent to the Oblast Centre for Immunoprophylaxis and then to the RCI at national level.

Most children are born in a maternity house, where they are screened by a paediatrician and given BCG and OPV by the immunization nurse (and Hepatitis B vaccine in the areas where it has been introduced). The hospital notifies the health authorities covering the area where the family lives. The nurse invites the eligibles when they are due for their next dose (see Box 4 for the immunization schedule). The paediatrician screens the child to check for contraindications and the nurse administers the doses.

There are paediatricians at the rayon hospitals, the children's polyclinics, the SUBs (neighbourhood hospitals) and the SVAs (ambulatory care clinics). Pediatricians from these facilities visit the FAPs (*feldsher* and Midwife Post), which are the most peripheral facilities, to screen the eligibles.

Box 4: The Immunization Schedule in the Kyrgyz Republic (revised 1992)

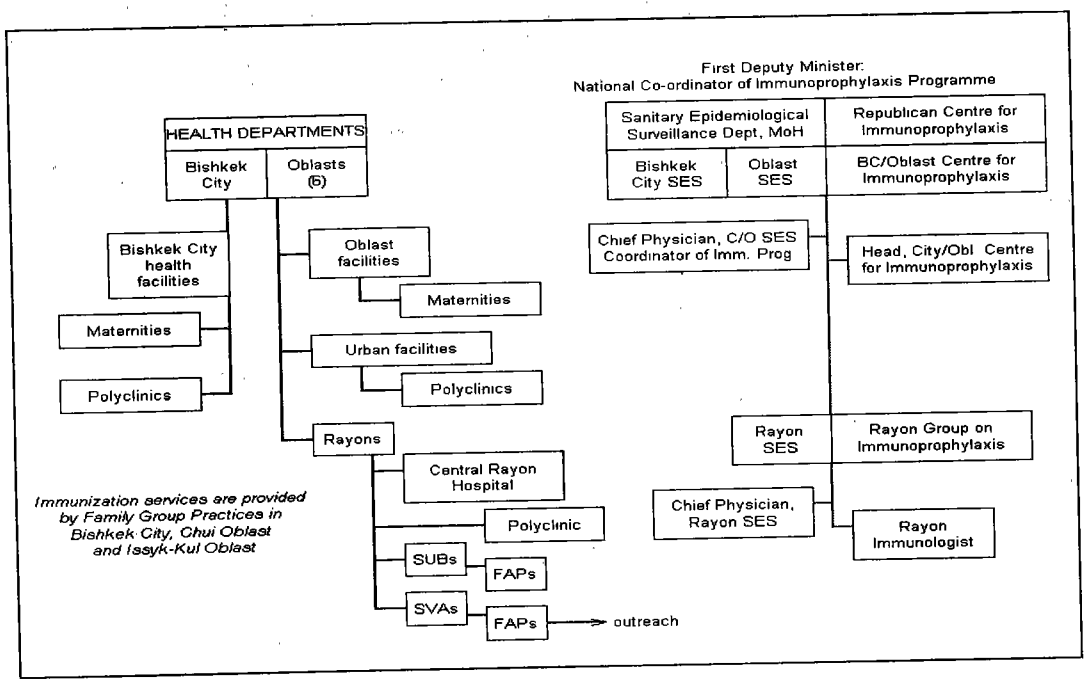
BCG	HepB	OPV	DPT	DT	Td	Measles	Mumps
3-4 days	3-4 days	Birth					
	2 mnths	2 mnths	2 months				
		3.5 mnths	3.5 mnths				
	5 mnths	5 mnths	5 mnths				
						12 mnths	
		16 mnths					
		18 mnths					18 mnths
			18-24 mnths				
					7 years		
7 years		7 years		6-7 yrs (DT5)			
					11 yrs (Td6)		
					16 yrs (Td7)		
					every 10 years		

Doses in shaded boxes are funded by UNICEF.

Sources: Report on Immunization Practice (Health Facility) in Weeks (1996b) and draft parent-held immunization card prepared by FGP Association.

The degree of specialization in the nurse's or *feldsher's* work depends on the staff at the particular facility. A polyclinic has an immunization room staffed by a nurse whose main job is to ensure that there is vaccine in the fridge, to monitor its storage, to administer doses, and to track the eligibles. The paediatricians are responsible for different "*uchastki*" (geographic areas) within the polyclinic's catchment area, and the nurses working with each paediatrician coordinate with the immunization room nurse. After screening by its paediatrician, the child is taken to the immunization room where the immunization nurse administers the doses. At a SUB or a SVA the workload does not warrant such specialization and the nurses working with the paediatricians are also responsible for administering immunizations. At a FAP there may only be one person permanently posted - the *feldsher* - who does everything.

Figure 4: Service providers and SES staff



Twice per year the nurses carry out a house-to-house "census" to enumerate the eligibles in their catchment area (see Box 2). The denominators for monitoring immunization coverage are updated using the data from this exercise.

The role of the immunization staff based in the SES continues to be supplying vaccine and specialized equipment, training and supervision of immunization activities at facilities, monitoring, and reporting to the next level.

The establishment of FGPs and enrolment with the practice of the family's choice seems to have brought few changes to this system in Issyk-Kul, Bishkek and Chui. The children's polyclinic buildings now have two other specialties working there; some paediatric staff have been reassigned to work in buildings that were formerly adult polyclinics, where staff have been retrained and new immunization rooms have been created. (The team did not visit a former adult polyclinic to see how children's immunizations are provided in a new setting.) At one children's polyclinic in Bishkek the transition to a family practice facility has had the effect of reducing the distance covered by that facility "from 20 km to 7 km." Whether this is radius or diameter, the effect is to improve access and diminish travel costs for both families and staff.

The reforms are still in progress, and are at different phases throughout the country; given all the changes in primary care, the immunization programme seems remarkably robust. Initial problems (such as some FGPs in Issyk-Kul wanting to remove the records of their enrolled children from the immunization nurse's office) have been worked out, and the experience has been applied to the next phase of implementation. Factors that have contributed to the robustness of the system include:-

a) the immunization programme had already been fundamentally reorganized (to include both paediatricians and epidemiologists),

b) a five year plan of action was already formulated and is being implemented,

c) staff understand the revised system for tracking eligibles and monitoring their own activity, and have been using it since 1996,

d) policy on paediatricians' clinical practices regarding contraindications had been updated before the retraining of primary specialists began,

e) the immunization component of FGP training was done in coordination with the RCI,

f) staff show great dedication and discipline despite the financial hardships they face.

However, there is concern that some of the familiar working practices for providing immunization activities may have to change as the reform of primary health care proceeds. The reforms must pay more attention to the role of preventive services and their dynamic relationship with the FGPs; if the preventive activities are left out, how will they maintain their strength and continue to complement the work of physicians? The next section highlights some risks and opportunities identified by the team.

8. Risks and opportunities

The team identified several risks that may threaten the strength and sustainability of the immunization programme. They also identified opportunities for improving the NPI within the context of health reforms. (Some of these risks and opportunities were discussed during the debriefing with the Minister of Health; see Annex 5.) In a year's time the risks may well be different; reforms are still in progress and the details are still being worked out.

8.1 The immunization schedule: opportunity for a win-win-win outcome

The immunization schedule shown in Box 4 is unique to the Kyrgyz Republic. It was revised in 1992 and still has scope for gains in both effectiveness and efficiency. Although Hepatitis B vaccine has been on the schedule for some years, 1999 is the first time that infant doses have been provided; there was not enough funding to introduce this vaccine nationwide.

8.1.1 Scope for rationalizing the immunization schedule

a) If the first dose of BCG were given between the day of birth and the baby's discharge from the hospital (usually at 4-5 days), wastage on this reconstituted vaccine would be reduced (Steinglass 1998).

b) The second dose of BCG should be cut as it does not increase protection against tuberculosis (WHO 1995, p.11).

c) Stopping the annual Mantoux test would save a great deal in direct costs, and would reduce the number of procedures using sharps, thus reducing risks.

d) The first dose of Hepatitis B vaccine should be given within the first 24 hours to achieve the full effectiveness of this relatively costly vaccine (Beasley 1988).

e) Effective protection against poliomyelitis can be achieved with fewer than seven doses of OPV.

f) If the schedule harmonized the ages at which doses were administered, this would reduce the number of visits, thus reducing costs to the health system and to families.

8.1.2 Scope for rationalizing funding to achieve vaccine self-sufficiency

At present the funding of immunization supplies (vaccine, syringes and safety boxes) is fragmented and unstable, resulting in gaps that pose a risk to the safety and effectiveness of immunization services.

The blocks shown in Box 4 are the vaccines funded by UNICEF. It should be noted that not all of the vaccine for the primary series of immunization is funded from this source (e.g. hepatitis B). Recent experience in Kyrgyzstan has demonstrated that Measles[11] is needed for effective disease control.

The approach to health sector reform in the Kyrgyz Republic includes rationalization, which would benefit this aspect of the national immunization programme. Reducing the unnecessary doses of BCG and OPV would:

- save $80 000 each year immediately; this money could be spent on full protection for 20 000 newborns against hepatitis B (vaccine, syringes and safety boxes);
- prevent several hundred cases of primary liver cancer and cirrhosis of the liver among these 20 000 newborns.

Both the RCI and the Health Sector Reform Team need to be involved in reviewing the schedule, including cost analysis.

During the debriefing with the Minister of Health, the team recommended that revision of the schedule should be done under the proposed National Immunization Coordinating Committee (NICC), thus involving donor partners (see Annex 5).

Partners could help to leverage these internal reforms using conditionality; for example:

- UNICEF wants the Kyrgyz Republic to start paying for primary vaccines;
- the Kyrgyz Republic wants enough hepatitis B vaccine for universal infant immunization;
- the World Bank could provide loan money on condition that the schedule is rationalized.

This situation offers a win-win-win opportunity, and shows how rationalizing the immunization schedule and its funding can be used to allocate resources more effectively, improve immunization and increase protection from serious disease, thus resulting in better health status at lower cost, which is one objective of Kyrgyzstan's reforms.

8.2 Syringes

Sterilizable injection equipment was used for immunization throughout the former Soviet Union, and some steam sterilizers with plastic sterilizable syringes were supplied in 1993 as part of the emergency support programme. However, a subsequent *prikaz* (regulation) stipulated that conventional disposables should be used for immunization. Sterilizable syringes are five to 15 times less costly per injection than disposables, and create a tiny fraction (0.05%) of the volume of waste created by disposable injection equipment. But because of the *prikaz*, there has been neither supply of spare parts nor replenishment of needles and syringes for the steam sterilizers since 1993.

[11] Second dose of measles vaccine is not part of the primary series.

In 1997 the government made it clear that it would not buy single use Auto-disable[12] (AD) syringes because of the price differential; they can buy more conventional disposables with a given budget. In the absence of a satisfactory system for destroying contaminated medical sharps, the staff disinfect used disposable syringes with bleach, then separate the needles from the syringes before sending them for disposal.[13]

There are shortages of syringes for immunization. For example Hepatitis B vaccine was procured with World Bank credits but without the syringes needed to administer the doses. What happens when there are stock-outs of syringes? The health system's position is that for immunization, people can accept the use of steam sterilized syringes, or families can bring their own. Most countries have a policy of free immunization, and this type of *ad hoc* cost sharing or community participation has many risks attached. There are two basic scenarios, with many permutations:

a) **Family buys syringes:** If they go to a shop or a trader, they may get the wrong size (immunization syringes are 0.5ml and 2ml; needles are 26G and 23G, i.e. smaller than syringes for most curative injections). The general public is not in a position to do quality control; people believe that a syringe in a package is clean, but packaging does not necessarily ensure that the syringe inside is either sterile or unused. If the family buys from the health worker, the transaction sets up a bad precedent as both sides know that immunization is supposed to be free; is the health worker charging a mark-up? what is the source of supply? The same concerns about lack of quality control apply. Given that 64% of the population is below the poverty line, buying a syringe may involve a trade-off; for the local value of a disposable syringe one could buy a loaf of bread.[14] This may lead the family to buy one syringe and use it multiple times, either for that child or for all family members. Such a solution means that recapping/resheathing the needle is unavoidable thus posing a known risk to the person who does it. Furthermore it is not possible to resterilize conventional disposables satisfactorily; the plastic from which they are made is not designed for re-use, and distorts or even melts at temperatures that are high enough to make it safe to reuse.

b) **Family decides not to buy syringes:** In this case the parents may accept the use of sterilized equipment. However, there has been much publicity about the desirability of disposable syringes, and the health service has not resupplied sterilizable needles (which get blunt) or syringes (which wear out in time), nor invested in making sterilization safe (e.g. replacement of worn out parts). Therefore it would be understandable if parents did not agree to the use of sterilizable injection equipment. The remaining option is that parents decide not to use the immunization service, leaving their child exposed to the risk of diseases which could be prevented.

12 AD syringes were described until this year as "Auto-destruct" syringes; however as participants observed during a meeting in Bishkek (November 1997) these syringes do not automatcally destroy themselves after use. Recognizing this fact, WHO has asked that ADs now be referred to as Auto-Disable syringes (WHO 1999).

13 It would not be possible to continue with this strategy of disinfection if ADs were used because the AD has a fixed needle.

14 The relative value of bread and syringes was described during the CARK MCH Forum meeting of the EPI Working Group on Safe Immunization Practices, held in Bishkek in November 1997.

In either scenario (a) or (b) the result is that the objective of safe injection practices is compromised by many failures: gaps in funding, choice of injection equipment that is too expensive for the budget, and a failure to pursue consistent policies on safe injection practices.

8.3 Immunization coverage as an indicator of quality

Immunization coverage has been put forward as a "quality indicator" of performance for FGPs, as shown in the extract from the FGP Association's definition of indicators shown in Box 5.

Box 5: Quality indicator of performance proposed by the FGP Association

$$\text{Immunization rate for measles} = \frac{\text{Total number of enrolled children aged 1 year and children aged 7 years with record of immunization for measles}}{\text{Total number of enrolled children aged one year and children aged seven years}} \times 100\%$$

Inclusions: For the *Numerator* and *Denominator*: all enrolled children
Exclusions: For the *Numerator* and *Denominator*: population without enrolment

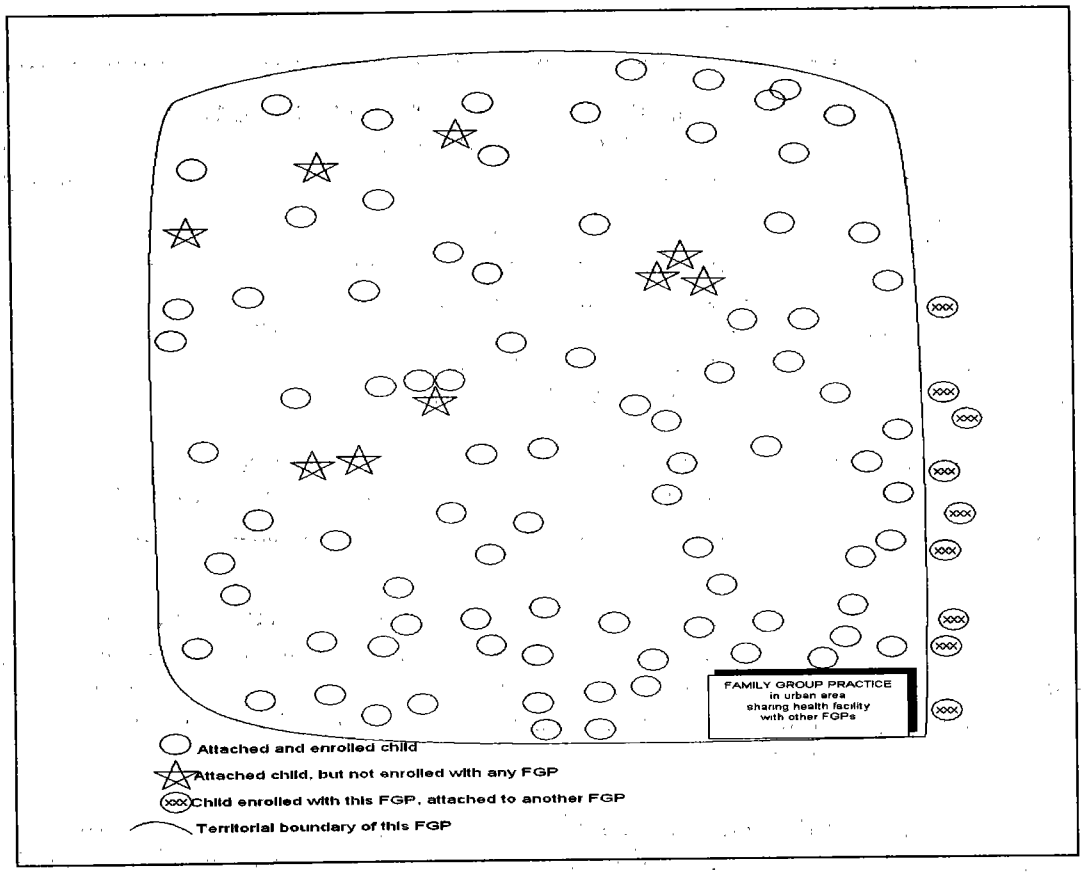
The indicator in Box 5 was developed by the FGP Association without input from the RCI. Experience tells us that there are serious problems with combining under-1s and 7-year-olds in the same indicator. The footnote clearly states that the unenrolled population is not included; what should the FGP do about their attached but unenrolled population?

There is a risk that this indicator would encourage FGPs to pursue an objective that is narrower than the objective of universal immunization, upon which this public health activity relies for its effectiveness at controlling vaccine preventable diseases.

- This performance indicator focuses on services provided by an individual FGP, and will be calculated from the new clinic cards in the new information system (see 8.4).
- On the other hand, the National Programme for Immunization's monitoring system focuses on current immunization status of the enumerated population at each level (counted during the nurses' twice yearly census).

The "invisibles" are children whose parents are mobile rather than settled in one place; these families are thus less likely to enrol with an FGP under the reformed system, or to be found in the area where their records are kept under the previous system. In both cases the "invisibles" are at risk of missing the nurse's invitation to bring the eligible child for immunization. However, the NPI's monitoring system (the second indicator above) is more likely to include the "invisibles" in the denominator.[15]

Figure 5: Picture of enrolled population



In Figure 5 the attached population is within the territorial boundary of the practice. The emphasis on users' choice means that within specified limits, families outside the area can enroll with the FGP of their choosing, thus the enrolled population may exceed 100% of the attached population. In Figure 5, some of the enrolled children are at risk of being exposed to vaccine preventable diseases:

- any newborns who have only received their birth doses,
- any children who are too young to have completed the schedule,
- any children with genuine contra-indications.

[15] The UK's National Health Service has provided a model for some aspects of the Kyrgyz reforms. In the UK, the Child Health Department in the (district) health authority allocates every child under 5 to a Health Visitor who may be attached to a general practice or based at a health clinic. One of the Health Visitor's responsibilities is to encourage parents to take their eligible children for immunization; the parents can choose where to obtain these services. The tracking of under-5s' movements around the country involves cooperation between several departments: health, social services, education.

The epidemiological risk to such children is increased by the presence of the unenrolled, especially migrants, whose immunization status is not tracked by the FGP. There is also a programme-wide risk that focusing attention on coverage by each FGP (to quantify immunization performance) would introduce to Kyrgyzstan the distorting concept of "coverage in operational areas."[16]

To address these risks, the team recommended to the Minister of Health that immunization status should be an indicator of quality which is used for routinely monitoring progress of health sector reforms at each level. The Kyrgyz Republic has a nationwide health system, and should continue the NPI's present practice of assessing coverage using all eligible children as the denominator. If the FGP Association wishes to include immunization as a performance indicator, then the details should be developed with the RCI. Such a combined effort will help to ensure (a) that the technical detail is correct, and (b) that the incentives are constructive and consonant with the nationwide goals of immunization.

8.4 Information systems

One of the central tenets of the Kyrgyz reforms is "joint systems, jointly used." This admirable approach has been applied to information systems and financial systems; for example the new clinic card provides data that will be used for multiple purposes. With some input from RCI the new clinic card could capture a wealth of data that are not available through the monitoring system. For example if the number of the dose were specified (e.g., "DPT2" instead of simply recording "DPT") then occasional operational studies (e.g. once per year) could use data from the clinic card database to identify the actual interval between doses and whether "late doses" were clustered in particular areas. The results would have practical applications for improving the quality and effectiveness of this preventive service. This application will require engagement by both sides: both the team working on the clinic card, and the RCI.

The NPI has already revised the old information system for tracking immunization activity. It has also created and implemented a monitoring system which was designed by health workers, for them to use at each level of the system. The NPI's monitoring system has programmatic indicators at each level, and enables both service providers and their supervisors to detect early signs of problems (such as falling immunization coverage or rising rates of contraindications) and to make the appropriate managerial decisions. This monitoring system has demonstrated its effectiveness (Weeks 1996b); its action orientated approach provides a model that the Health Sector Reform Team should use when developing programmatic indicators for other health service activities. Immunization coverage should continue to be monitored at the levels where managerial responsibility is exercised, starting with the service providers.

[16] This concept was used in countries with very limited health infrastructure where immunization services did not cover the entire population; figures for coverage in "operational areas" inflate the true level of coverage.

Another element of developing the information systems to fit the new circumstances involves the management of immunization records. Until now, all the forms and record books detailing the doses that individual children have received are kept at the facility. There is no spare budget for postage, and no central clearing house for forwarding these records through official channels. If a parent tells the health staff that the family is moving, the records may be taken to the new facility, but this depends on the parent's initiative. The default is that the facility loses contact with the child, the records become out of date, and a new set of records is started at the new facility; in the absence of documentation of previous immunizations, some doses may be duplicated. The levels of temporary and permanent migration within the country make it necessary to develop a better method of forwarding the movers' records. This also applies to FGP records when enrollees change their registration to a new practice. The parent-held immunization record offers a way of ensuring that this aspect of health care is correctly documented and that the doses still due are obtained on time.

8.5 Parent-held card

A parent-held record of a child's immunization history was not part of the old information system. Until now parents have been alerted by health staff that the next dose is due; this puts the parents in a passive role, and absorbs a great deal of staff time. Introducing a parent-held record will be consonant with the reform's objective of increasing the population's responsibility for their health. The card puts into the parents' hands a document that informs them about the doses that are due, and at what ages. The team was shown two designs for the card, both of which could be substantially improved by referring to the vast experience with such cards in other parts of the world. The size of some sample cards (e.g. a 54-page booklet used in France) must be weighed against the practicalities of budget constraints and printing costs. Sponsorship by manufacturers must be weighed against the possibility that vaccine tenders may be awarded to different suppliers. Given the current concerns about childrens' nutritional status, the Health Reform Team should consider adapting the classic "Road-to-Health" chart on which both weight-for-age (growth rate) and immunization history are recorded on one A4 card.

8.6 Equipment for vaccine storage

The list of equipment in the MANAS document (1996b) Annex III says that "equipment necessary to ensure the cold chain" should be supplied to FAPs, and that primary health care centres and groups should have "cold chain equipment (refrigerator, etc.)." The equipment list in the World Bank's Facilities Rehabilitation Component (World Bank 1996) does not include any cold chain equipment; the reason for this was that the World Bank and the MoH thought all external funding for immunization was covered by other donors. The refurbishment that will be carried out under the Asian Development Bank loan refers to "a standard package of PHC-related equipment and furniture" to be procured under international competitive bidding; the needs of facilities selected for rehabilitation will be determined by the project coordination office, the Hospital Association and "the Association of Family Doctors." The FGP Association has developed a list of equipment that can be purchased using an FGP's allocation from the Health Fund (currently up to 55% of the total amount).

Special refrigerators and freezers for storing vaccines have been developed (WHO 1998); they have longer hold-over times (in case of power cuts) and better insulation than domestic equipment, giving greater protection for toxoids and hepatitis B which are damaged by freezing. Neither the Facilities Rehabilitation Component staff nor the Project Coordination Unit were aware that vaccine cold chain equipment meets specifications that are far more stringent than specifications for domestic refrigerators. If whole life costing were used, the losses of vaccine in storage due to exposure to unacceptable temperatures would make the domestic equipment much more costly to the user than is indicated by the purchase price.

There is a risk that the investments in cold chain equipment using loan funds or FGPs' Health Fund money could be spent on inappropriate equipment. The team saw frozen DPT vaccine during this mission even though they only looked at vaccine storage in six facilities. Since 1992 there have been fewer doses in the schedule, so it is even more important that every administered dose is potent. The new investment funds provide an opportunity to procure the correct cold chain equipment; the RCI and specialized technical assistance should be included in the process of specifying cold chain equipment. This could take the form of a "shopping list" of prequalified models, indicating the capacity of each, from which FGPs can choose. Cold chain equipment will probably have to be imported, so central procurement would reduce the cost to the FGPs. Training in correct use of new equipment will also be necessary.

8.7 Vulnerable areas of funding

It has already been highlighted that funding of vaccines (8.1), injection equipment (8.2) and cold chain equipment (8.6) is incomplete. Other vulnerable areas include salaries and transport. Salaries were recentralized in 1997 to try to overcome the problem of lateness; at the time of this mission, salaries for October 1998 had been paid. Salaries are a "protected" line item in the government budget and will be paid eventually. The transport line item is not protected and in rural Rayons the administration is likely to cut this allocation. Lack of transport threatens both the paediatricians' visits to FAPs to screen eligibles, and supervisory visits by the SES immunization staff.

One way to address this issue and that of incomplete and unstable funding from donors and loan agreements is to use a new mechanism, the National Immunization Coordinating Committee (NICC) chaired by the Deputy Minister of Health. The remit of the NICC should be to make transparent the financially vulnerable sections of the NPI, to coordinate complete and cost-effective funding, and to coordinate technical inputs and approaches. An immunization programme consists of more than simply the provision of vaccines. The NPI needs a coordinating mechanism to ensure that the many pieces of the immunization system - policies, practices, supplies, logistics, training, procurement, financing, monitoring and management - remain linked in a coherent manner.

8.8 Including SES in the reforms

The reforms have made enormous progress in the health sector. However it is difficult to find concrete evidence that staff from the SES were actively involved in the development of reforms. A new effort to improve the effectiveness of the SES's work on environmental health and to coordinate it with the Environment Ministry's work began in 1998 (MoH and WHO/EURO 1998, MacArthur 1998).

At present the PHC reforms focus mostly on issues surrounding the provider, purchaser and patient/user rather than on public health, with its population-based perspective. The team found many examples of opportunities missed for all parties because the RCI has not been sufficiently engaged with the Health Reform Team on issues relating to immunization. At the point of service delivery the team heard in Issyk-Kul Oblast that the immunization nurse has been included in the salary bonus paid from the FGP's Health Fund allocation, but the extent of such inclusion in different places was not assessed. However, it seems that the immunization officers at Rayon and Oblast level are too far removed from the FGP's provision of services to be included in salary bonuses from this source. Nor do SES staff have any mechanism within the reforms for obtaining supplements for their operating budget (e.g. for transport). For alleviation of such budget shortfalls they are dependent on the reform of local government, its ability to raise taxes and the commitment of local decision makers to allocate funds for preventive health services. Through the immunologists and immunization nurses, the SES and the FGPs work in partnership to raise coverage and to sustain it at high levels. For this reason the team recommended that immunization nurses and immunologists should receive greater recognition.

Preventive services support the primary health care provided by FGPs, so it is in the interest of PHC reforms to include the SES more actively. The critique in Box 6 reminds us not to ignore the effect on morbidity of preventive services that are working well. Even if immunization is functioning well now, it still needs constant attention to enable it to continue preventing morbidity and mortality effectively and efficiently. The changes in immunization services since 1991 attest to the need for continuous updating and development.

Box 6: Recognizing the contribution of effective prevention of disease

"The burden of disease analysis [for three countries in Central Asia] suggests that vaccine preventable diseases imposed a relatively small cost — in terms of lost DALYs/DLYs — on the population, although the incidence of certain such diseases, like diphtheria, have risen recently.

"However, [that analysis] does not reflect the enormous potential for loss of life if present control efforts are not sustained.

"The same argument applies to tuberculosis and STDs."

From "A survey of Health Reform in Central Asia" (Klugman and Schieber 1996).

9. Recommendations

The recommendations to the Minister of Health were as follows (see Annex 5):

1.1) Maintain the catchment approach - immunization based on where one lives.

1.2) Use immunization as an indicator for monitoring the progress of PHC reform at each level.

1.3) Recognize the contribution of immunologists and immunization nurses.

2.1) All relevant parties should "network" to ensure that best practices for immunization matters are identified and consistently promoted

3.1) A National Immunization Co-ordination Committee should be re-established, led by the Ministry of Health, chaired by the Deputy Minister

3.2) NICC should oversee a review of the calendar (immunization schedule) and its cost implications

3.3) The next World Bank loan should include immunization as an integral part of PHC

The Minister agreed that immunization coverage will be used at all levels as an indicator of health sector reform; that immunization coverage will continue to be organized and monitored by territory; that immunologists will be included in incentive schemes; that a National Immunization Coordinating Committee (NICC) would be created; and that immunization will be included in the next World Bank health loan.

The following recommendations were presented to WHO, UNICEF, USAID, the World Bank and other partners during briefings in Geneva, Copenhagen and Washington during March and April 1999:

a) Advocate immunization as part of the next World Bank loan. The Minister of Health requests assistance from WHO in preparing for the World Band pre-design visit in May; the assistance should include immunization.

b) Provide WHO support to the Ministry of Health on hepatitis B prevention and control.

This recommendation is to follow up the support that WHO's Director General promised to the President of Kyrgyzstan in Davos.

c) Provide WHO support to the Head of the Republican Centre for Immunoprophylaxis (RCI) in two areas:

- drafting a law on immunoprophylaxis; this will include the calendar (immunization schedule), vaccine injury compensation, and other matters.
- preparing a new plan for the National Programme for Immunization, to cover the period 2000-2005

d) Revisit the design of MANAS Health Sector Reforms to include SES reforms, while recognizing the functions of the RCI and Oblast Centres for Immunoprophylaxis

e) Coordinate with ongoing work on reform of the SESs in the Region, while highlighting special features in each country (such as the RCI and the monitoring system for immunization in the Kyrgyz Republic)

f) Continue advocacy for a National Immunization Coordinating Committee

g) Advocate with SOROS and other potential partners for support to immunization

h) Continue to support safe injection policy and its implementation (injection equipment, safety boxes, incinerators)

i) Persuade the World Bank to become a signatory to the bundling strategy developed by WHO/UNICEF/USAID; this strategy is designed to ensure that when injectables are purchased, the injection equipment for ensuring sterile injections and correct disposal are purchased in the appropriate quantities.

j) Circulate technical updates on "Low Temperature Protection" cold chain equipment to medical equipment specialists who draw up PHC equipment lists.

k) Elaborate illustrative health indicators - of process and of outcome - for monitoring immunization (and other preventive services) during the progress of health sector reform

l) Guide the World Bank and other partners on health sector reform in general and on the features of immunization programmes and the particular needs of immunization

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Annex 1:
Immunization and health sector reforms in the European Region (including the NIS)

Draft terms of reference for a multi-agency review
(23 December 1998)

Background

During recent years a number of countries have initiated reforms of their health systems and services. These efforts have sometimes been assisted by donor partners including bilateral and multilateral organizations and development banks. In some cases the reforms have sought to replicate certain aspects of health systems in richer countries (e.g. Germany, United Kingdom, United States of America). The preparations and planning of new health systems have typically been undertaken within a context of radical economic changes, which themselves have not yet reached the desired steady state scenario of stability and growth. Few countries have completed the planned reforms of their health systems, and the process of change and adjustment continues.

Major elements of health reform include the financing mechanisms, the decentralization of health systems management and development of effective district capacity for planning and implementing health service delivery within the reformed health system. In some countries the objective is to rationalize the health services and improve co-ordination; in many of these countries the concept of essential health services or the basic health package is the foundation for planning the reforms, which sometimes explicitly cite cost-effectiveness as a criterion for inclusion in the essential package. In other countries, especially in Eastern Europe and the Newly Independent States (NIS), the ambition has been to introduce market mechanisms into the health service. Reforms have typically been triggered by political and economic change stretching far beyond the health system. In many cases the choice of strategies for health reform appears to depend mainly on the views of particular donor partners and advisors, rather than being tailored to specific national situations and the capacity of the health system to implement reforms. There has been inadequate recognition of the market's failure to promote healthy behaviours and prevention. Efficiency has been stressed but insufficient consideration has been given to effectiveness and impact on health status.

In the former communist bloc, preventive health services such as immunizations have traditionally been managed by public health specialists, who are epidemiologists based in the "sanitary inspectorate" units at district level. This branch of the health service is typically responsible not only for communicable diseases (prevention and surveillance) but also for environmental health and food safety, and is managed by

the "public health" department at national level. The pediatricians are curative staff managed by the curative medical department in the Ministry of Health. [This separation between the preventive, public health perspective and the curative perspective ends at the point of service delivery: the nurses who administer immunizations receive instructions from the eligible child's pediatrician and from the epidemiologist.] This structure of service provision has been in place for many years, and has achieved high levels of coverage with immunization administratively separate from MCH. The structure differs fundamentally from the program-based approach adopted by the Expanded Programme on Immunization (EPI) as a model for introducing immunization in developing countries, either as part of MCH or as a separate vertical program.

The planned changes to the health system and the reform process itself will inevitably affect the immunization service. The changes affect the traditional preventive structures and approaches, and in order to maintain the benefits of immunization it is necessary to analyse the development and to explore how high quality immunization services can be accessed and utilized to the greatest extent possible within the context of health reforms. Furthermore, immunization services are essentially a public good which justifies public investment and it is essential to determine how reforms of the health system will affect preventive services such as immunization. Responsibility for the prevention and control of infectious diseases in most countries of the world resides in the public sector. Early indications of the weakening of the public health system are evidenced by the return of previously-controlled infectious diseases, many of which are preventable by immunization, such as polio, diphtheria, tuberculosis, sexually transmitted diseases, typhoid, cholera, malaria, anthrax, etc.

Targets for disease control will be broadened in the coming years as more antigens become available and target groups are expanded. The concern is that health reforms should support international and national efforts for disease control through immunizations, and that these efforts should be consistent with and support a country's chosen path to reforming its health system.

The purpose of this multi-agency review is to identify and analyse changes in immunization services and to provide guidance and identify strategic options for maintaining and improving immunization services for improved disease control in settings with reformed health systems.

Objectives

- Conduct a review of immunization in 2-3 countries in the European Region of WHO with respect to the planned health reforms and the processes for implementing them.
- Identify strategic options for influencing (a) the development of immunization services in the region and (b) the design of donor assistance in support of improved preventive health services.

Outputs

- A report in English and translated into Russian will be prepared to review immunization in both countries before and during the health reform process. The report will compare the findings in the respective countries with experience from elsewhere.
- Guidelines in English and Russian will be formulated to maintain past immunization and disease control achievements and to modernize the immunization service for countries that are undertaking health reforms and for the donor partners that are supporting and advising them.

Scope of work

The scope of work for the team shall consist of:

a) a description of the health reforms, evolution, progress achieved, problems encountered, and inputs provided by various players in the process

b) an analysis of the structures, functions, organization and management issues related to immunization services [before and after] the health reforms

c) a qualitative assessment of the expected impact of the health reforms on immunization service delivery

d) an identification of quantifiable indicators of impact that can be analysed during the process of reforms and after the reforms have been implemented

e) a review of the resources available for carrying out immunization services before and after the health reforms, including financial, material and human resources and the sources of funding; qualitative aspects (e.g. timeliness of funds)

f) a description of involvement of the community in immunizations before and after the reforms

g) an assessment of political commitment to immunizations before and after reforms at central and decentralized levels

h) an analysis of the potential contradiction between increased decentralization or privatization and the implementation of regional and global disease control efforts

i) an assessment of the effects of decentralization and privatization compared with previous arrangements for carrying out immunization functions

j) an assessment of the requirements for immunization program support within basic health services packages

k) an identification of ways to ensure that immunization receives priority as a core health service at central, district and peripheral levels

l) an analysis of the adjustments which the immunization service needs to undertake in the changed environment

m) an identification of key issues for immunization services in health reform settings that are pertinent to or applicable at the regional [and global] level

n) preparation of a set of guidelines related to immunization services which can serve as a reference to guide countries and partners engaged in health sector reforms

o) formulation of strategic options on how results from the multi-agency review will be used to influence the development of preventive health services and the design of donor assistance in support of reforms which preserve and strengthen essential public sector services.

Plan of work

- The Team Leader will be a senior WHO/EURO staff member. The rapporteur will be provided by USAID through its BASICS Project. Each participating team member will have writing assignments.
- The review will be undertaken by an external team consisting in each country of four to five persons, complemented by four to five nationals.
- Participating agencies will assign the same team members for each of the country visits to ensure continuity and consistency of approach. The team will spend two weeks in each country. In recognition of busy schedules among the high-level staff who will participate and to permit a period of reflection and report-writing between the trips, there will be an interval of several weeks between each country visit.
- The team members will brief themselves by reading key recommended documents before starting the field visits, and will then constitute themselves as a team and work out an approach for covering the scope of work. Their final written reports shall be delivered at the end of the assignment to the principal rapporteur.
- The team members shall present a written summary of their findings in English and Russian to the MOH, Ministry of Finance and relevant development partners at the end of the stay in each country, with copies to Regional and Headquarters offices of the respective developmental partners.
- Under the supervision of WHO/EURO, the final team report will be consolidated and edited by the principal rapporteur prior to publication in English and Russian.
- Individual team members will debrief with their respective agencies at their home base and be available at their home base in case of any jointly-scheduled debriefings.

Participating agencies

- WHO/EURO, World Bank, UNICEF, USAID (BASICS and Abt Associates)
- Ministries of Health
- Ministries of Finance

Specific expertise

1) Epidemiology, to cover for example:
   - disease trends
   - unravelling the reported coverage before and after (the specialist must be fluent in the cohort approach to reporting, and in the practice of excluding contraindicated eligibles)
   - preventable illnesses prevented
   - choice of strategies, including the schedule of doses (before and after)
   - trends in doses administered on time (from survey data if already available)
   - trends in contraindications
   - reporting, notification, surveillance and response

2) Operations management, to cover for example:
   - organizational structure for performing essential functions for immunization before, and now (micro-level changes)
   - choice of strategies, including training and implementation
   - supply/procurement at national level; quantities, timing
   - supply and distribution through sub-national levels; stock-outs, shortages
   - storage conditions, quality of cold chain at each level (this includes private providers)
   - storekeeper behaviour (releasing vaccines and other supplies)
   - monitoring, reporting systems, supervision of quality (including private); upgrading skills
   - resource management

3) Clinical and behavioural aspects, to cover for example:
   - previous practices, changes in practices, compliance with changes; training and supervision (pediatricians, nurses and epidemiologists)
   - quality of services and staff behaviour: sterile injection equipment, timeliness and completeness of doses
   - client behaviour: trends, reasons for high/low uptake

4) Financial, political and economic aspects, to cover for example:
   - political developments and general economic trends
   - description of the reforms, their genesis, philosophy, ambitions, constraints, time line for implementation (pilot experience, implementation plans, progress, current status); changes in structures at the macro-level.
   - responsibilities for financing elements of immunization, by level/source (e.g. oblasts, rayons, local municipalities) (a chart or matrix; before, and now)
   - supply/procurement at national level; quantities required compared with allocations; trends in estimates, approved allocations, timeliness
   - local purchases/supply: trends in estimates, approved allocations, timeliness

Dates

Field work:	1 - 12 March 1999 in Kyrgyzstan
Debriefing:	at Interagency Immunization Coordinating Committee Meeting in Copenhagen, 25-26 March 1999 [team leader and rapporteur]
Field work:	to be determined for Bulgaria and possibly 3rd country
Completion of report:	contingent on completion of work in all countries

Budget

Participating agencies will need to fund:

- salary, per diem and round-trip travel from home country to Kyrgyzstan for one staff member
- salary, per diem and round-trip travel from home country to Bulgaria for one staff member
- local costs in each country (translator for one staff member, local secretarial services, local travel, and per diem for travel for one national from either MOH or MOF, as appropriate)
- local costs associated with any debriefings at home base.

Annex 2:
Schedule of meetings and people met

Monday 1st March

Dr Victor GLINENKO	First Deputy Minister of Health
Dr Svetlana FIRSOVA	Head, Republican Centre for Immunoprophylaxis (member of the mission team)
Dr Marat BOZGUNCHIEV	Director, WHO Information Centre for CAR
Prof Tilek MEIMANALIEV	Deputy Minister of Health, Programme Co-ordinator, MANAS

Tuesday 2nd March

Dr Nadejda MELNICHUK	Head, Bishkek City Health Department
Dr Suyumcan MUKEEVA	Chief Therapist, Bishkek City Health Department Co-ordinator of Know How Fund
Dr Farida TABALDIEVA	Chief Pediatrician, Bishkek City Health Department
Dr Antonina GUZHAVINA	Head, Centre for Immunoprophylaxis, Bishkek CHD
Dr Sabyrjan ABDIKARIMOV	General Director, Department on Sanitary Epidemiological Surveillance
Dr Kylychbek ABDRAKHMANOV	Executive Director, Family Medicine Training Centre
Dr Paul FONKEN	Family Medicine Excellence Centre
Dr Anara ABILOVA	Family Medicine Excellence Centre
Dr David FRICKE	Family Medicine Excellence Centre
Dr Adylbek JUDENOV	Deputy Chief Physician, Bishkek City SES

Wednesday 3rd March

Dr Ainagul ISAKOVA	Chairwoman, Family Group Practice Association
Dr Shailoobek NYYAZOV	Head, Chui Oblast Health Department

Dr Kubanichvek KARAKULOV	Deputy Head, Chui Oblast Health Department
Dr Salidat ABDIKERIMOVA	Chui Oblast Centre for Immunoprophylaxis
Dr Terme SHADIKANOVA	Chief Infectionist, Chui Oblast Health Department
Dr Temira NARYNBAEVA	Head Physician, Polyclinic Number 8
Immunologist	Polyclinic Number 8
Dr Ismail AKHUNDOV	Chief of Alamudin Rayon SES, Chui
Mrs Vera MIKHAILICHENKO	Chief Epidemiologist, Alamudin Rayon SES, Chui
Dr Natalia KARASEVA	Head of Kok-Jar FAP, Gynaecologist
Mrs GULMARIA	*feldsher*, Kok-Jar FAP
Staff at Polyclinic in Alamudin Rayon	

Thursday 4th March ***(travel from Bishkek to Issyk-Kul Oblast)***

Dr Damika SAALIEVA	Head, Issyk-Kul Oblast Health Department
Mr KYDYRGYCHEV	Mayor, Kara-Kol City
Dr Sagynbek YAYZBAEV	Chief Physician, Issyk-Kul Oblast SES
Dr Anara OROZAKUNOVA	Head, Issyk-Kul Oblast Centre for Immunoprophylaxis
Dr Gulmira ASHIRAKHAMANOVA	Head, Issyk-Kul FGP Association
Mrs Fatima KASMAKHUNOVA	Manager, Abt Associates, Issyk-Kul

Friday 5th March

Mr Bolot ELEBESOV	Technical Director, Abt Associates, Issyk-Kul Oblast
Bakyt AKMATOV	Office Manager, Abt Associates
Staff at FGPs in Karakol	
Dr Sadyrbek CHYNYBAEV	Chief Physician, Central Rayon Hospital, Djety-Oguz Rayon, Issyk-Kul
Dr Tyulen MAKEEV	Chief Physician, Djety-Oguz Rayon SES
Dr Dinara ALYBAKOVA	Immunologist, Djety-Oguz Rayon Immunoprophylaxis Group
Dr Begimjan KANEVA	Physician, FGP #2, Djety-Oguz Rayon
Dr Erkingul BATIRKANOVA	Physician, FGP #2, Djety-Oguz Rayon
Dr Lubov GABOVA	Physician, FGP #2, Djety-Oguz Rayon

Immunization nurse	FGP #2, Djety-Oguz Rayon
Dr Zaivakan OROZBAYEVA	FGP in Saruu Village, Djety-Oguz Rayon

Saturday 6th March

Mr Djanysh JEEMBAEV	Head, Issyk-Kul Oblast Finance Department
Dr KYRGYZBAEV	Head, Health Insurance Fund, Issyk-Kul Health Dept.
Ms NAIMANBAEVA	Leading Specialist, Health Insurance Fund, Issyk-Kul
Dr Gulnara RAKHMATOVA	Deputy Chief Physician, Issyk-Kul Oblast Maternity House in Karakol
Marina TAGIROVA	Chief Nurse, Oblast Maternity House
Shair ISMAILOVA	Immunization Nurse, Oblast Maternity House

Monday 8th March ***(leave Issyk-Kul, travel to Bishkek)***

Tuesday 9th March ***(International Women's Day)***

Dr Tyelegen CHUBAKOV	Head of Post-Diploma Training Centre, MoH
Dr Ainagul ISAKOVA	Chairwoman, Family Group Practice Association
Dr Makhmud SULTANMURATOV	Rehabilitation Component Coordinator, Technical Coordination Committee, HRP
Ms Chinara SEITALIEVA	Pharmaceutical Component Coordinator, HRP
Acelle SARGALDAKOVA	Coordinator for Monitoring and Evaluation, HRP
Dr Kalyskan KULTAEVA	PHC Coordinator, HRP
Ms Ainura IBRAHIMOVA	Deputy Head, Health Insurance Fund

Wednesday 10th March

Ms Larisa KOCHKORBAEVA	Director, Medico-Informational Dept, MoH
Ms Valentina GAIDAMAKO	Head, Informational-Technical Dept, Health Reforms Department, MoH
Mr Bolot SARBANOV	Director, Project Coordination Unit for World Bank funded Health Project
Dr Almaz IMANBAEV	WHO Liaison Officer
Ms Ludmila ZABIROVA	Health Issues, Ministry of Finance

Thursday 11th March

Dr T T TOPCHUBEKOV	Head of Paediatric Department, Continuing Education Centre, MoH
Dr Alla BURE	Master Trainer for Nurses, Continuing Educ. Centre
Dr Djoldosh KALILOV	Republican Centre for Immunophrophylaxis
Mr Ahmat MADEUYEV	Executive Director, Soros Foundation
Ms Maya AN	Soros Foundation
Ms Dinara DJOLDOSHEVA	World Bank
Mr Ken MASKALL	Assistant Representative, UNICEF
Ms Chinara SADYKOVA	Programme Consultant, UNICEF
Ms Sheila O'DOUGHERTY	*Zdrav*Reform Program Co-Director
Ms Genevieve GRABMAN	Health Marketing, Abt Associates, Zdrav Reform
Prof Frank HARRIS	Maternity & Pediatrics Consultant, Know How Fund
Mr David PORTER	Medical Equipment Consultant, Know How Fund
Dr Chris POTTER	Health Policy & Human Resources Consultant, KHF
Ms Jane HAYCOCK	Project Manager, Know How Fund

Friday 12th March

Dr Naken KASIEV	Minister of Health
Prof Tilek MEIMANALIEV	Deputy Minister
Dr Victor GLINENKO	First Deputy Minister
Dr Almaz IMANBAEV	WHO Liaison Officer

Saturday 13th March

Mr Stephane GUICHARD	Technical Officer, UNICEF Area Office for CARK
Mr Simon STRACHAN	Senior Project Officer, UNICEF Area Office - CARK

Annex 3:

Overview of the Kyrgyz Republic

The Kyrgyz Republic is in the north eastern part of Central Asia and shares borders with Kazakhstan, Uzbekistan, Tajikistan and China. It has a population of 4.48 million (1996) and with an area of 19 800 km^2 is one of the smallest of the former Soviet Union republics that became independent in 1991. Kyrgyzstan is landlocked and occupies the Tien Shan range of mountains. The average elevation is 2750 meters and nearly all of the population live above 1800 meters. Approximately 62% of the population live in rural areas, and the economy is primarily based on agriculture.

The ancient Kyrgyz lived in the territory of north western Mongolia and moved towards the north west between 200 BC to 100 BC. There they formed their first state known as Kyrgyz Khanat, which existed from 600 AD to 1300 AD. During this period the Kyrgyz culture started to develop and the Kyrgyz language was first written down. The historical events of those times and data related to social and traditional customs were accumulated in the folk epic "MANAS" which is also the name of the main hero of the epic. The millenium of MANAS was celebrated in 1995.

After 1300 AD, Kyrgyzstan remained under the rule of various tribes and in 1921, as part of Turkistan, became a Soviet Socialist Republic. In 1936 Kyrgyzstan became a constituent Soviet Socialist Republic of the USSR. Following the collapse of the former Soviet Union Kyrgyzstan gained its independence in August 1991.

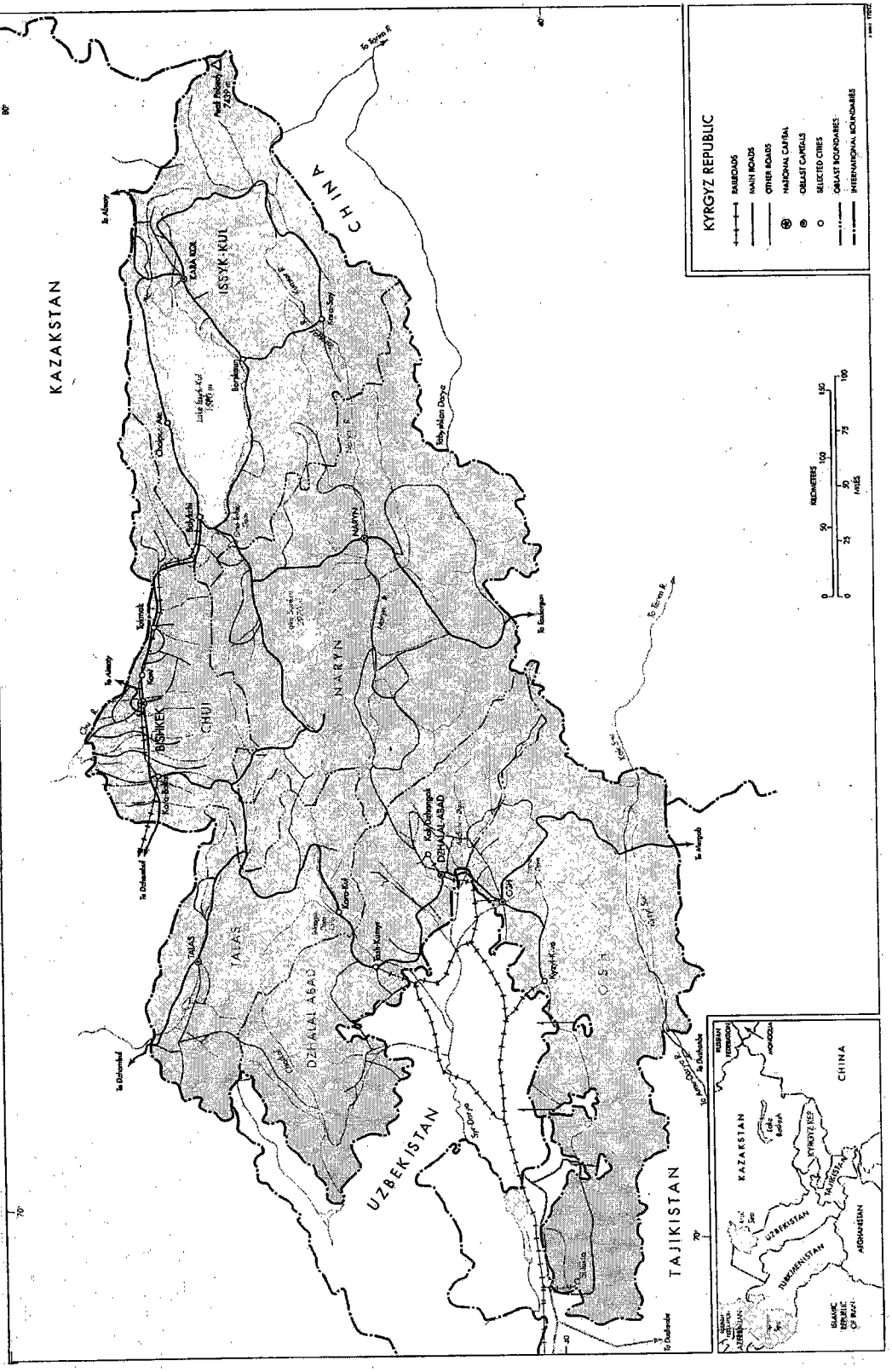
Ethnic Kyrgyz comprise about 57% of the population, followed by Russians (19%), Uzbeks (14%), Ukrainians, Germans, Tartars, Dungans, Kazakhs, Uigurs and Tajiks. Since independence, there has been migration to the other republics mainly by Russians, Germans and Ukrainians.

Kyrgyzstan is a democratic parliamentary republic. The legislative body consists of two houses of the parliament (Jogorku Kenesh). The lower chamber is the legislative house with 35 parliamentary deputies and is responsible for drafting new laws. The upper chamber is the House of Representatives and has 70 parliamentary deputies. Since independence in 1991 the country has been experiencing a transition from a centrally controlled economy to a market economy, moving from a system that relies on the former soviet administrative structure to a new structure of its own.

The Republic is divided into six Oblasts (regions): Chui, Issyk-Kul, Osh, Talas, Jalal-Abad and Naryn. The capital Bishkek has the administrative status of an Oblast. Each Oblast is headed by an administrator called the "Akim" who is appointed by the President of the Republic.

Even before the disintegration of the Soviet Union about one-third of the populaiton had a "socially unacceptable standard of living." Since 1990 there has been a substantial decline in real GDP; in 1990 GNP per capita was US$1075, in 1994 it was US$630 and after the crisis in November 1998 almost two-thirds of the population were below the poverty line. Kyrgyzstan has embarked on a comprehensive programme of macroeconomic stabilization and structural reforms including privatization, restructuring of state enterprises and reform of the financial sector.

Figure 6: Map of the Kyrgyz Republic



Annex 4:
Expected workload and population served by primary specialists, and full time equivalents (FTEs)

The expected workload of each specialty was obtained from two informants. The two sources gave similar workloads for paediatricians and gynaecologists, but different workloads for internists (adult internal medicine):

- Each paediatrician should have 750 clients aged 0-14 years
- Each internist should have 3000 clients aged 15+ years (or 1500 to 1700)
- Each gynaecologist should have 3750 clients - women 15-49

From MANAS National Programme on Health Care Reforms (1996-2006), Annex 1, the team used the following assumptions:

- 37% of the population is aged 0-14 years,
- 24% of the population are women of childbearing age.

These assumptions have been combined with the workload norms to calculate the total population served by one full time primary specialist of each type listed above. Two workload assumptions are shown for internists.

Table 1: Expected workload and population served by specialty, and FTEs

Specialty	Workload	For target	% of population	Population served by one specialist	FTEs* per 16 000 population
Pediatrician	750	children 0-14	37%	2027.0	7.7
Internist a	1600	adults 15+	63%	2539.7	6.2
Internist b	3000	adults 15+	63%	4761.9	3.3
Gynaecologist	3750	women 15-49	24%	15 625.0	1.0

* FTEs: Full time equivalents.

Based on current assumptions about a feasible workload, the last column (FTEs) illustrates that the population served by one gynaecologist would need eight paediatricians, and either 6.6 or 3.5 internists (depending which workload assumption is chosen). Conversely, one full time paediatrician is expected to serve a population of 2000, for which the gynaecological workload could be met by 13% of a gynaecologist's time (about 1/8 FTE) and the adult internal medicine workload could be met by 80% (6.2/7.7 FTE) or 43% (3.3/7.7 FTE) of an internist's time, depending on the assumptions about workload.

In reality, neither staff nor communities can be divided up so precisely. The important point is that when multi-specialty FGPs are created, some doctors will share their time between more than one facility, and some FGPs will contain more specialists from one faculty than the others. As the number of specialists in family medicine grows, the distribution of physicians and their workload will alter; the reforms are designed to make more efficient and effective use of health manpower.

Annex 5:
Debriefing to the Minister of Health, Kyrgyz Republic, 12 March 1999

1) The National Programme of Immunization has a robust system for ensuring protection of eligible children.

- Republican Centre for Immunophrophylaxis functioning by 1994.
- Universal access of eligibles, and tracking eligibles.
- Coverage is monitored at all levels on the basis of residence (not enrolment).

This system appears to have been maintained under the implementation of PHC reforms.

Risks:

- Migration
- Exclusion of immunologists from the HIF incentive system

Recommendations

1.1 Maintain the catchment approach - immunization based on where one lives

1.2 Use immunization as an indicator for monitoring the progress of PHC reform

1.3 Recognize the contribution of immunologists and immunization nurses

2) Under reforms, new entities have been created. The FGP Association has developed various systems that need to be consistent with immunization's technical requirements, for which the RCI is responsible. For example,

- Quality indicators, equipment list, parent-held immunization card.

Risks:

- The different perspective of FGP Assn may undermine immunization

Recommendations

2.1 All relevant parties should "network" to ensure that best practices for immunization matters are identified and consistently promoted

3) Immunization is one of the best investments in health. At present, its financing is insufficient, unstable, fragmented, and the multiple components of the programme are not always addressed in an integrated manner.

Risks:

- Faulty equipment not repaired, ageing equipment not replaced
- Operational funding (e.g. transport) overlooked
- Excesses of some items and shortages of others
- More Hepatitis B vaccine is needed for universal coverage
- "Bundling" policy not followed for vaccine procured through WB loan Gaps in funding lead to operational disruptions

Recommendations

3.1 National Immunization Co-ordination Committee to be re-established, led by the Ministry of Health, chaired by the Deputy Minister

3.2 NICC to oversee a review of the calendar and its cost implications

3.3 World Bank loan should include immunization as an integral part of PHC

The re-orientation towards PHC and prevention is excellent, and immunization is key.